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AERIAL PHOTOGRAPHY AIDS IN MONITORING COASTAL FOREST CHANGE IN FLORIDA

U.S.D.A. Forest Service, Forest Health Monitoring Evaluation Monitoring Project (Grant #08-98-12-G-07)

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In 1991-92, the Florida Division of Forestry was alerted to abundant, unexplained, and putatively recent mortality of cabbage palms (*Sabal palmetto* (Walt.) Lodd) in the Waccasassa bay area along the state's gulf coast. Subsequent aerial reconnaissance revealed the phenomenon to be extensive (Fig. 1), extending northward and southward for miles along Florida's peninsular west coast, with outlying spots of apparently similar mortality at various locations (low-lying areas, river mouths, etc.) around the state's coastline. The interesting and spectacular forest change, which includes the loss (mortality) of redcedars (*Juniperus* spp.), pines (*Pinus* spp.) and oaks (*Quercus* spp.) has been attributed to sea level rise and its accompanying influences on vulnerable, low-lying coastal areas (Simons et al. 1989, Williams et al. 1999).



Figure 1. Coastal forest mortality near Waccasassa Bay on Florida's west coast.

In support of the Division of Forestry's initial investigations, the U.S. Forest Service's Forest Health Protection unit in Atlanta aerially photographed four transects in areas at or near the epicenter of the activity in October of 1992. In October of 1998, with support from a Forest Health Evaluation Monitoring Grant, the Forest Service acquired a second set of aerial photographs of the same transects. A subsequent grant-supported contract between the Florida Division of Forestry and Intergraph/Geonex Corporations provided a 6 year interval analysis of this coastal forest change (Patterson 1999). The purpose of the analysis was to document temporal (progressive, regressive, or static) and spatial changes. Change was detectable, yet apparently very slow, a phenomenon perhaps not unexpected given the possible (and putative) geologic time scale of the change. The analysis and supporting photography provide a useful baseline for future evaluations, should the need arise.



Fig. 2 & 3. Dead and dying cabbage palms and remnants of redcedars (some harvest residue) along Florida's west coast near Crystal River.

Literature Cited

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